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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,472	09/25/2003	Myung Dae Oh	DPO-0007	4853
34610 7590 02/26/2007 KED & ASSOCIATES, LLP 2325 DULLES CORNER BLVD. SUITE 1100 HERNDON, VA 20171			EXAMINER SHAN, APRIL YING	
			ART UNIT	PAPER NUMBER

2135

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/669,472

Applicant(s)

OH, MYUNG DAE

Examiner

April Y. Shan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/06, 1/06 and 11/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-52 have been examined.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Admitted Prior Art

4. Examiner is aware of the admitted prior art under the Background of the Related Art from paragraphs [2] – [25] from pages 1-7 of the Applicant's specification.
5. Examiner acknowledged that on page 8, paragraph [29], the Applicant discloses, "in the first method...the network performs the ciphering activation process using a related-art method previously described.

Claim Objections

6. Claim 8 is objected to because of the following informalities:

As per **claim 8**, "an RAND value" should be "a RAND value";

Please check claims 1-52 to correct any informality the Applicant is aware of.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-6, 13-19, 25-31, 32-38 and 44-46 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-6 and 13-19 are directed to a method of ciphering call information transferred between a mobile communication terminal and network. The examiner respectfully asserts that the claimed subject matter does not fall within the statutory classes listed in 35 USC 101. The claimed steps do not result in a tangible result. Claims 1-6 and 13-19 are rejected as being directed to an abstract idea (i.e., producing non-tangible result) [tangible requirement does require that the claim must recite more than a 101 judicial exception, in that the process must set forth a practical application of that 101 judicial exception to produce a real-world result, Benson, 409 U.S. at 71-72, 175 USPQ at 676-77).

Claims 25-38 and 44-46 are directed to a method for communicating information in a mobile communication system. The examiner respectfully asserts that the claimed

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subject matter does not fall within the statutory classes listed in 35 USC 101. The claimed steps do not result in a tangible result. Claims 25-38 and 44-46 are rejected as being directed to an abstract idea (i.e., producing non-tangible result) [tangible requirement does require that the claim must recite more than a 101 judicial exception, in that the process must set forth a practical application of that 101 judicial exception to produce a real-world result, Benson, 409 U.S. at 71-72, 175 USPQ at 676-77).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 41-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Arata et al. (European Patent publication number 0617528 A2, published on 28 September 1994).

As per **claim 41**, Arata et al. discloses mobile communications network controller, comprising: a receiver which receives a ciphering request from a mobile terminal ("When the user of a radio telecommunication apparatus requests a privacy mode and a call origination, the apparatus of the present invention sends a call signal including the requested privacy mode to a base station." – e.g. abstract. Please note base station is part of the network); and a processor which ciphers information to be transmitted to the terminal or receives ciphered information from the terminal in response to the ciphering request ("If the base station adopts a communication mode

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corresponding to the communication mode requested by the user, the base station sends the acknowledge signal to the communication mode requested by the user, the base station sends the acknowledge signal including the communication mode corresponding to the requested mode...If the received communication mode corresponds to the private mode...That is, the control circuit 30 communicates with the base station over the designated speech...in the designated privacy mode (step 210)" e.g. col. 8, line 34 – col. 9, line 6).

As per **claim 42**, Arata et al. discloses a method as applied above in claim 41. Arata et al. further discloses a TDMA in col. 5, line 11 and fig. 9. To a person with ordinary skill in the art that SMS is provided in the TDMA system and the Short Message Service (SMS) allows text messages to be sent and received to and from mobile telephones. The text can comprise words or numbers or an alphanumeric combination. Therefore, Arata et al. reference met the claimed limitation wherein the ciphered information includes at least one of SMS information, SS information, and PDP context activation information.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 1-40 and 43-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Al-Tawil et al. (IEEE publication "A new authentication protocol for GSM network", published in 1998) in view of Arata et al. (European Patent publication number 0617528 A2, published on 28 September 1994).

As per **claim 1**, Al-Twail et al. discloses a method of ciphering call information transferred between a mobile communication terminal and a network, comprising:

transmitting a registration request from the terminal to the network ("Step 1: the MS transmits the registration request (location update) to the base station... The registration request includes the temporary mobile subscriber identity (TMSI) and LAI, steps 2-4 on page 22, right column and fig. 5 on page 23);

transmitting a ciphering authentication request message from the network to the terminal (e.g. fig. 2 on page 23 and "step 5: the VLR sends the RAND to the MS..." – e.g. page 22, right column. Please note VLR is part of the network as disclosed on pages 21-22 and MS corresponds to Applicant's terminal);

transmitting a ciphering authentication response message ("...the signed result (SRES) is returned" – e.g. page 22, lines 36-37. Please note SRES corresponds to Applicant's ciphering authentication response message) from the terminal to the network in response to the ciphering authentication request message ("step 6, the MS computes the SRES...then sends SRES back to the VLR..." – e.g. page 22, right column and fig. 5 on page 23); and

transmitting a ciphering activation completion message from the network to the terminal (e.g. fig. 5 on page 23 Please note "Set Ciphering" in fig. 5 corresponds to Applicant's a ciphering activation completion message) in accordance with the ciphering authentication response message ("Step 7: the VLR once receives the SRES from the MS, compares it with the SRES provided from the AuC. If the two are equal, the MS passes the authentication process" – page 22, right column)

Al-Twail et al. does not expressly discloses transmitting a ciphering request for call information from the terminal to the network.

Arata et al. discloses transmitting a ciphering request for call information from the terminal to the network ("When the user of a radio telecommunication apparatus requests a privacy mode and a call origination... sends a call signal including the requested privacy mode to a base station" – e.g. abstract)

Al-Twail et al. and Arata et al. are analogous art of the same field of mobile communication.

It would have been obvious for a person with ordinary skill in the art at the time of the invention to incorporate Arata et al.'s transmitting a ciphering request for call

information from the terminal to the network into Al-Twail et al.'s method or replace Al-Twail et al.'s transmitting a registration request from the terminal to the network with Arata et al.'s transmitting a ciphering request for call information from the terminal to the network.

The motivation of doing so would have been to enable a caller/user to "sends a call signal including the requested privacy mode to a base station" and "use a privacy mode having a voice privacy feature which protects the user's communicated voice signal against eavesdropping", as taught by Arata et al. (abstract and col. 2, lines 40-43).

As per **claim 2**, the combined teachings of Al-Twail et al. and Arata et al. discloses a method as applied above in claim 1. Al-Twail et al. further discloses wherein the ciphering authentication request message includes a RAND value ("a random number RAND is sent" – e.g. page 22, left column, lines 35-36).

As per **claim 3**, the combined teachings of Al-Twail et al. and Arata et al. discloses a method as applied above in claim 1. Arata et al. further discloses wherein the ciphering request is transmitted by the terminal during a time when the call information is being transferred between the terminal and network (e.g. col. 4, lines 15-26. Please note a radio telecommunication apparatus corresponds to Applicant's terminal and base station is part of the network.)

As per **claim 4**, the combined teachings of Al-Twail et al. and Arata et al. disclose a method as applied above in claim 1. Arata et al. further discloses wherein the ciphering request is transmitted by the terminal during a time when the call information is not being transferred between the terminal and network (e.g. abstract and col. 3, line 56 – col. 4, line 14).

As per **claim 5**, the combined teachings of Al-Twail et al. and Arata et al. disclose a method as applied above in claim 1. Arata et al. further discloses wherein the call information includes a voice information (e.g. col. 2, lines 40-43).

As per **claim 6**, the combined teachings of Al-Twail et al. and Arata et al. disclose a method as applied above in claim 1. Arata et al. further discloses wherein the call information includes data (e.g. col. 2, lines 40-43).

As per **claim 7**, Al-Twail et al. discloses a method of ciphering call information transferred between a mobile communication terminal and a network, comprising:

transmitting a registration request from the terminal to the network, the request message including a specific value ("Step 1: the MS transmits the registration request (location update) to the base station... The registration request includes the temporary mobile subscriber identity (TMSI) and LAI, steps 2-4 on page 22, right column and fig. 5 on page 23/in the 4.1 proposed authentication scheme, step 1 on page 26, right column);

computing a key value required for a ciphering activation process based on the specific value, said computing being performed by the network ("Step 2: once the new VLR receives the TMSI... Step 3... Step 4: the AuC computes SRES and Kc by applying the MS's secret key Ki and a RAND number to the A3 and A8 algorithms..." – e.g. page 22, right column);

transmitting a ciphering activation completion message indicating completion of the ciphering activation process (e.g. fig. 5 on page 23 Please note "Set Ciphering" in fig. 5 corresponds to Applicant's a ciphering activation completion message); and

ciphering the call information to be transferred between the terminal and network ("Step 7... The privacy of users is achieved by ciphering the traffic between the user's terminal and the radio base station to prevent eavesdropping and protecting the exchange of the signaling message.... The secrecy of Ki is the cornerstone on which all the security mechanism is based." – e.g. page 22, right column).

Al-Twail et al. does not expressly disclose transmitting a ciphering request for call information from the terminal to the network.

Arata et al. discloses transmitting a ciphering request for call information from the terminal to the network ("When the user of a radio telecommunication apparatus requests a privacy mode and a call origination... sends a call signal including the requested privacy mode to a base station" – e.g. abstract)

Al-Twail et al. and Arata et al. are analogous art of the same field of mobile communication.

It would have been obvious for a person with ordinary skill in the art at the time of the invention to incorporate Arata et al.'s transmitting a ciphering request for call information from the terminal to the network into Al-Twail et al.'s method or replace Al-Twail et al.'s transmitting a registration request from the terminal to the network with Arata et al.'s transmitting a ciphering request for call information from the terminal to the network.

The motivation of doing so would have been to enable a caller/user to "send a call signal including the requested privacy mode to a base station" and "use a privacy mode having a voice privacy feature which protects the user's communicated voice signal against eavesdropping", as taught by Arata et al. (abstract and col. 2, lines 40-43).

As per **claim 8**, the combined teachings of Al-Twail et al. and Arata et al. disclose a method as applied above in claim 7. Al-Twail et al. further discloses wherein the specific value includes a RAND value (in the 4.1 proposed authentication scheme, step 1 on page 26, right column)

As per **claims 9-12**, they are rejected using the same rationale as rejecting claims 3-6 above.

As per **claim 13**, Line 25, Left column of page 22 to Line 22, Right Column of Page 23, Figs. 4, 5 of Al-Twail et al. reference discloses using the RAND value to compute key value K_c , and then the network sends the Set Ciphering (corresponds to

ciphering activation completion message) to the terminal, and the network may generate random number RAND and compute/store SRES, and send the RAND to the terminal, the terminal transmits the signed response SRES (authentication response message) to the network, and network compares the SRES transmitted from the terminal and the SRES provided by the AuC to determine whether the authentication process is completed.

Al-Twail et al. does not expressly disclose transmitting a ciphering request for call information from the terminal to the network and determination whether the RAND value is included in the ciphering request message received by the network, and take further action according to the result.

Arata et al. discloses "4. proposed authentication protocol for GSM networks... In the devised scheme, a random number RANDM (64 bits) is generated locally by the MS... The RANDM is generated locally from the MS, and it is sent to the network... For our scheme, we have AUTHR, RANDM, as public parameters, and Ki, Kc are also maintained as private parameters..." (e.g. section 4 on page 25 – page 27, left column, line 21 and section 4.5 on page 28)

It would have been obvious to a person with ordinary skill in the art to determine whether the RAND value is included in the ciphering request message received by the network, and take further action according to the result.

The motivation of doing so would have been to help deciding further action accordingly whether it is GSM approach or it is the proposed scheme..

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Arata et al. discloses transmitting a ciphering request for call information from the terminal to the network ("When the user of a radio telecommunication apparatus requests a privacy mode and a call origination... sends a call signal including the requested privacy mode to a base station" – e.g. abstract)

Al-Twail et al. and Arata et al. are analogous art of the same field of mobile communication.

It would have been obvious for a person with ordinary skill in the art at the time of the invention to incorporate Arata et al.'s transmitting a ciphering request for call information from the terminal to the network into Al-Twail et al.'s method or replace Al-Twail et al.'s transmitting a registration request from the terminal to the network with Arata et al.'s transmitting a ciphering request for call information from the terminal to the network.

The motivation of doing so would have been to enable a caller/user to "sends a call signal including the requested privacy mode to a base station" and "use a privacy mode having a voice privacy feature which protects the user's communicated voice signal against eavesdropping", as taught by Arata et al. (abstract and col. 2, lines 40-43).

As per **claims 14-16, 18 and 19**, they are rejected using the same rationale as rejecting claims 2-6 above.

As per **claim 17**, the combined teachings of Al-Twail et al. and Arata et al. disclose a method as applied above in claim 13. Arata et al. further discloses in the

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abstract "Thereafter, the apparatus receives an acknowledge signal from the base station... If the received designated communication mode does not corresponds to the requested privacy mode, the apparatus warns the user", in col. 5, lines 20-34, the portable apparatus has a LCD display 5 in fig. 1 and in claims 5 and 6, "the apparatus... comprises warning/displaying means for displaying information indicating that the requested privacy mode is not designated by the base station". It is obvious to a person with ordinary skill in the art, the warning message disclosed in the Arata et al. can be a ciphering authentication unavailable message of the call information from the network to the terminal.

As per **claim 20**, the combined teachings of Al-Twail et al. and Arata et al. discloses a method of ciphering of call information transferred between a mobile communication terminal and a network, comprising: transmitting a ciphering deactivation request for the call information from the terminal to the network and performing ciphering and transmitting a ciphering deactivation completion message to the terminal in response to the ciphering request message as applied above in claim 1.

Arata et al. further discloses in col. 3, lines 11-24, Arata et al. discloses "... In response to the inputted information, the portable apparatus sends a call signal including the user's requesting mode to a base station..."

It would have been obvious to a person with ordinary skill in the art that a ciphering request can include a ciphering deactivation request transmitting a ciphering deactivation request for the call information from the terminal to the network and

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performing ciphering deactivation and transmitting a ciphering deactivation completion message to the terminal in response to the ciphering deactivation request message.

The motivation of doing so would have been "to adopt the mode other than the privacy mode", as taught by Arata et al. (col. 3, lines 23-24)

As per **claims 21-24**, they are rejected using the same rationale as rejecting claims 3-6.

As per **claim 25**, it is rejected using the same rationale as rejecting claims 1, 7 and 13.

As per **claims 26-30**, they are rejected using the same rationale as rejecting claims 2-6 above.

As per **claim 31**, the combined teachings of Al-Twail et al. and Arata et al. discloses a method as applied above in claim 25. Al-Twail et al. further discloses a GSM (Global System for Mobile communication) in the abstract. To a person with ordinary skill in the art that SMS was created as part of the GSM phase 1 standard and The Short Message Service (SMS) allows text messages to be sent and received to and from mobile telephones. The text can comprise words or numbers or an alphanumeric combination. Therefore, the combined teachings of Al-Twail et al. and Arata et al. met the claimed limitation wherein the ciphered information includes at least

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one of SMS information, SS information, and PDP context activation information.

As per **claim 32**, it is rejected using the same rationale as rejecting claims 1, 7, 13 and 25.

As per **claims 33-37**, they are rejected using the same rationale as rejecting claims 2-6 above.

As per **claim 38**, it is rejected using the same rationale as rejecting claim 31.

As per **claim 39**, Al-Twail et al. discloses a GSM challenge/response signaling process, "including a mobile station MS for receiving the ciphered information from the network or transmitting the ciphered information to the network after the acceptance of the ciphering request" (See Line 25, Left Column of Page 22 to Line 22, Right column of page 23, Figs. 4, 5).

Al-Twail et al. does not expressly disclose transmitting a ciphering request for call information from the terminal to the network.

Arata et al. discloses transmitting a ciphering request for call information from the terminal to the network ("When the user of a radio telecommunication apparatus requests a privacy mode and a call origination... sends a call signal including the requested privacy mode to a base station" – e.g. abstract) and a transceiver 15 in fig. 1 for transmitting a call signal including the privacy mode to the base station when the

user requests for privacy mode and call origination and a controller 30 in fig. 1 for assigning the privacy mode.

Al-Twail et al. and Arata et al. are analogous art of the same field of mobile communication.

It would have been obvious for a person with ordinary skill in the art at the time of the invention to incorporate Arata et al.'s transmitting a ciphering request for call information from the terminal to the network into Al-Twail et al.'s terminal or replace Al-Twail et al.'s transmitting a registration request from the terminal to the network with Arata et al.'s transmitting a ciphering request for call information from the terminal to the network.

The motivation of doing so would have been to enable a caller/user to "sends a call signal including the requested privacy mode to a base station" and "use a privacy mode having a voice privacy feature which protects the user's communicated voice signal against eavesdropping", as taught by Arata et al. (abstract and col. 2, lines 40-43).

As per **claim 40**, it is rejected using the same rationale as rejecting claim 31.

As per **claim 43**, the combined teachings of Al-Twail et al. and Arata et al. disclose the claimed steps as applied above in claim 1. Therefore, the combined teachings of Al-Twail et al. and Arata et al. discloses a program stored in a computer-readable medium for carrying out the method of steps.

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As per **claims 44, 45, 47 and 49-51**, they are rejected using the same rationale as rejecting claims 20, 25 and 32.

As per **claims 46 and 48**, they are rejected using the same rationale as rejecting claim 31.

As per **claim 52**, it is rejected using the same rationale as rejecting claim 31.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (See PTO-892).

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Contact Information

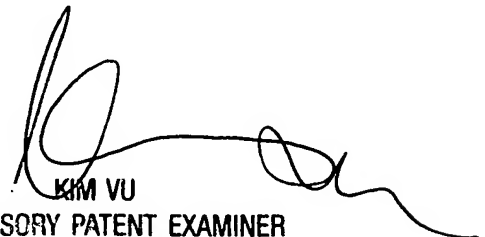
Any inquiry concerning this communication or earlier communications from the examiner should be directed to April Y. Shan whose telephone number is (571) 270-1014. The examiner can normally be reached on Monday - Friday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AYS

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12 February 2007



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